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New Spiders from New England, XI

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NEW SPIDERS FROM NEW ENGLAND.

Eleventh Paper.

Since my last paper in these Transactions in 1913 several new species of spiders have been found in New England and are here described and named. *Theridion aurantium* has been known as a variety of *T. sexpunctatum*, with which it is often found. *Tetragnatha pinicola* has also been long known but has been considered a variety of *T. laboriosa*. *Linyphia limitanca*, a large and distinct species, was discovered simultaneously, in 1913, in Aroostook County, Maine, and in Newfoundland and may be a common spider north and east of New England. *Dictyna armata* is new to New England, having been found only in North Carolina by Banks. The other three new *Dictyna* have come from a general rearrangement of this genus. *D. brevitarsus* has been confused with *D. muraria* under the name *D. sublata* Hentz. *D. bicornis* is a distinct species found at several points along the seashore. *D. angulata* is a small species, related to *muraria*, found in the hills south of Boston. *Tmeticus rectangulatus* is another of the indistinct species allied to *T. entomologicus*. *Theridion sexpunctatum* is found to range across North America and to be as variable as other species of the Phyllonethis group. The variety of *Epeira labyrinthea* is very distinct in markings and spinning habits corresponding with its different habitat. The male of *Hahnina brunnea* and the new species *Theridion intervallatum* and *Sergiulus unimaculatus* are chance discoveries from much beating of bushes and sifting of litter on the ground.

Theridion intervallatum. new sp.

Male 1.5 mm. long. Abdomen nearly spherical and half larger than the cephalothorax. The cephalothorax is slightly yellow with an indefinite middle line between the eyes and the dorsal groove. The back of the abdomen is light at the sides and has a darker pattern in the middle consisting of four pairs of dark spots between which are opaque white spots and fine black dots of different sizes. On the under side the abdomen is dark at the sides and light in the middle. The sternum is light like the back of the cephalothorax. The legs are marked with small and irregular black spots near the ends and middle of each joint. The male palpi have the tarsus and palpal organ narrow with the tarsus twice as long as wide. At the end of the tarsus are a few stiff hairs twice as thick as the others. The palpal organ has the appendages small and simple, with the tube and two other processes lying side by side, pointing toward the end of the palpus. Figs. 1, 1a, 1b. Pl. I.

Intervale, N. H., July, 1913, Miss E. B. Bryant.

Theridion aurantium. new sp.

Female 3 mm. long; cephalothorax 1 mm. Male with cephalothorax as long as in the female, but much smaller abdomen. The cephalothorax is orange in both sexes, without any middle or lateral stripe, rarely in females dark gray. The legs are pale yellow in females and orange in males. The first leg of the male is two and a half times the length of the whole body. The abdomen of the female is commonly light gray with opaque white markings at the sides and in pairs along the middle. Black spots may also occur in one or more pairs, and in some individuals cover nearly the whole abdomen. Fig. 2, 2a. Pl. I. In males the abdomen is commonly pale, with a pair of black spots at the sides toward the hinder end, and these spots may be lengthened into a pair of stripes, or the whole back may be black. Fig. 2b, 2c, 2d. Pl. I. The mandibles of the male are so long that with the height of the head they are as long as the cephalothorax. They are not

much spread apart at the end, and have a thick tooth half as long as their diameter, only a short distance from the claw. In some individuals there is a smaller tooth between the large one and the end of the mandible, but it varies in size and position, and is often absent on one or both sides. Fig. 2e. Pl. I. The mandibles are shorter and less divergent than in *sexpunctatus*, and less variable. The palpi of the male resemble closely those of *sexpunctatus*.

This species is swept from low bushes or sifted from dead leaves on the ground. Crawford Notch, Franconia Notch, Adirondacks, Aroostook County, Maine, Maine Woods, south to Portland, Maine, and Manchester, N. H., often in company with *T. sexpunctatum*, with which species it has been usually confused.

***Theridion sexpunctatum*. Em.**

This species is now known across the continent to the Rocky Mountains, Vancouver and Sitka. The long mandibles of the male are found to vary in length and shape but without any relation to locality. The male mandible always has a large tooth on the inner side just beyond the end of the maxillae and the variable part is the distal end beyond this tooth. Sometimes this is as long as the basal part and tapering and divergent and it then has three or four teeth differing in size, position and number sometimes differing on opposite mandibles of the same individual. In others the distal part of the mandible is half as long as the basal and the teeth are very small. In others the distal part is still smaller. One from Sitka in the collection of Nathan Banks has mandibles like this but still shorter. Figs 3, 3a, 3b. Pl. I.

***Tmeticus rectangulatus*. new sp.**

A translucent spider 1.5 mm. long, resembling *T. entomologicus* from Tyngsboro, Mass., 1911; *T. digitatus*, Em., from Ithaca, N. Y., Journal N. Y. Ent. Soc., 1914, and *T. acummatus*, Em., from New Jersey, Bulletin Am. Museum, N. Y., 1913. It differs from these species in the tibia of the male palpus, which is truncate and has three small teeth across the end. Fig. 4. Pl. I.

One male each from Mt. Mansfield, Vt., and Brunswick, Me.

***Linyphia limitanea*. new sp.**

3.5 mm. long. Cephalothorax pale dull yellow with the edges darker and a dark band from the eyes backward to the dorsal

groove. The legs are yellow, darker at the ends of the joints. The abdomen is pale, with a dark middle band divided into segments, the anterior one usually darker and the second lighter than the others. The sternum and under side of abdomen are yellow brown like the dorsal markings. The epigynum is covered by a slightly convex plate, twice as wide as long, and straight at the posterior edge through which the openings show as dark spots. The males have longer legs and darker coloring than the females. The male palpi have on the patella a long process somewhat like that of *L. phrygiana*, but longer and sharper and more curved inward at the tip. Fig. 5. Pl. I.

Found in a grove of spruce trees at Fort Fairfield, Me., Aug., 1913, and July, 1914, and by Miss E. M. Esterbrook at Stevensville Crossing, Newfoundland. Webs like those of *L. phrygiana*.

Epeira labyrinthea, Hentz, Bog variety.

This variety was found on the upper part of Mt. Lincoln, Colo., by F. C. Bowditch in 1877. In 1902, H. C. Britcher found it at Lunksos, east of Mt. Katahdin, Me. My first acquaintance with it was in August, 1913, on the bog at Crystal, Me., where I found an old female with nests and eggs. The next year, July, 1914, I visited the same bog earlier in the season, and found both sexes. On this bog these spiders live in the stiff narrow-leaved grass, *Scirpus caespitosus*, growing about a foot high over the open parts of the bog. In July their nests are small, attached to two or three grass leaves drawn together, and differing from the typical *labyrinthea* nest only in having around it a smaller "labyrinth." At this time males have nests like the females. In August, after the females have laid eggs, the nests are enlarged and improved, and hang down from the bunch of grass leaves, held in place by strong threads extending in several directions to other leaves, often three or four inches distant. In the typical bush nest of *labyrinthea* (see photograph in Comstock's Spider Book, pages 464-465), the egg cocoons are attached outside the nest, sometimes partly united with it, but in the bog variety the cocoons are enclosed in the upper part of the nest, forming a cone of light brown silk on the outside of which are scattered lumps composed of the remains of insects and sometimes leaves from neighboring plants.

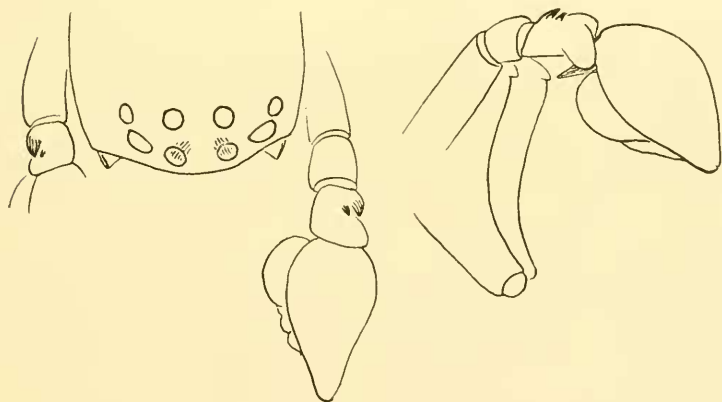
This variety differs from the usual *labyrinthea* in its deeper color and greater contrasts between the black and white markings.

The four white spots on the front of the abdomen are much larger and closely united into a light spot covering the whole front half of the back, while the markings of the hinder half unite into an equally conspicuous black spot. The dark markings of the legs are blacker and more sharply defined. These peculiarities are most evident in old females and least in males, which follow more closely the usual markings of the species. Figs. 6, 6a, 6b. Pl. I.

Tetragnatha pinicola. new sp.

This species resembles *laboriosa*, but is colored bright green with white stripes at the sides, and a red spot at the front end of the abdomen, sometimes continued as a red line on each side close to the white stripes. Immature individuals found at various times have been considered a green variety of *T. laboriosa*, but several adults, including one male, found on pines at Nantucket, in company with *laboriosa*, show several differences beside the color. The palpi of the male have the tibia half longer than the patella, and the tarsus and palpal organ are larger than in *laboriosa*. The legs are also longer than those of *laboriosa*, leg I being about one one-sixth longer. This is true of females as well as males. The arrangement of the eyes is as in *laboriosa*, the lateral eyes being perhaps a little closer together. Figs. 7, 7a. Pl. I.

Nantucket and Martha's Vineyard, Mass., on pine trees.



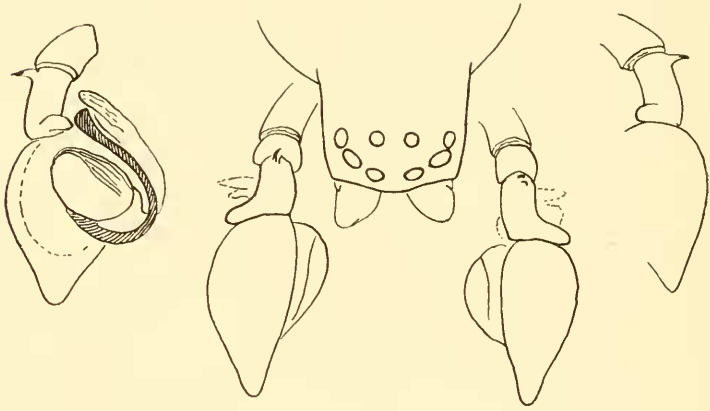
Dictyna brevitarsus

Dictyna brevitarsus. new sp.

2 mm. long and usually dark in color. The cephalothorax brown, darkest on the head. The legs the same color as thorax, but lighter, and the palpi darker. The abdomen is marked like *muraria*, with the middle mark of the front end distinct and less broken into spots than usual.

The mandibles of the male have a slight tooth at the base. The male palpi are of middle size, with the tarsus and tibia together as long as the mandible. The tibia is as wide as long, a little widened at the end. The two-spined process is at the side and directed forward. Figures page 139.

Danvers, Mass., Mt. Washington Glen, Ithaca, N. Y.



Dictyna angulata

Dictyna angulata. new sp.

2 mm. long; males and females the same size and colored alike. The general color is pale dull yellow, covered with light gray hairs. The legs are pale with no markings. The cephalothorax is yellow brown, lightest on the head. The abdomen has the usual middle gray mark, most distinct on the front half, dwindling to a fine line behind where it is more or less connected with a double row of partly united spots.

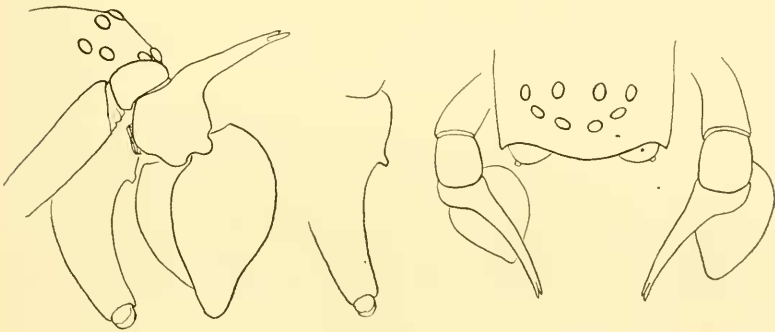
The male palpi are large, the tarsus as long as the mandibles. The tibia is a little longer than wide, and at the distal end as wide as it is long. The two-spined process is not more than a fourth as long as the tarsus, and on the upper side close to the base. Figures above.

Hyde Park, Mass., in leaves on the ground.

*Dictyna bicornis****Dictyna bicornis*. new sp.**

2 mm. long. Pale; cephalothorax yellow brown; abdomen slightly marked with a few pale gray spots. The mandibles have a large tooth on the front. This tooth, which occurs as a very small point near the base in several species, here extends downward and is half as long as the claw of the mandible. The male palpi have the tibia and tarsus together as long as the mandible. The tibia is as wide as long and widened at the end on the outer side. The two spines near the base are sessile, one longer than the other. Figures above.

In plants on sandy shores at Ipswich, Mass., Ogunquit, Me., and Bayville, Long Island, N. Y., Banks Collection.

*Dictyna armata****Dictyna armata*, Banks. Proc. Acad. Nat. Sci., Phila., June, 1911.**

Male 2 mm. long. Legs pale and translucent. Cephalothorax pale, a little darkened at the sides. Abdomen faintly marked with gray. The general appearance suggests a small *D. frondea*. The male palpi have a long spur on the tibia, extending forward at right angle to the tibia. The mandibles have a very small blunt

tooth on the front, a third its length from the base of the mandible, Figures page 141.

Blue Hills, near Boston, in dry oak leaves. Banks found it in North Carolina in rolled leaves of *Rhododendron* lying on the ground.

Hahnia brunnea, Em. 1909.

The male of this species was found at Island Falls, Aroostook County, Maine, July, 1914, in moss in spruce woods. It resembles the female closely in size and color and in the spinnerets. The male palpi are large and differ conspicuously from those of the other species. The appendage of the tibia is large and in a flat coil on the outer side. The patella is large and thick on the upper side, and has no appendage, but the femur has a tooth on the outer side near the base turned upward and curved slightly inward. The tube is long enough to make two turns around the palpal organ. Figs. 8, 8a. Pl. I.

Several females were found in 1911 at Ithaca, N. Y.

Sergiolus unimaculatus.

Male 5 mm. long. Half as large as *S. variegatus* and more slender. The legs and cephalothorax are dull yellow without any markings. The abdomen is gray with a pale band across the middle. On the front end of the abdomen is a thickened spot narrowed behind and extending across the white band. Fig 9, Pl. I. On the under side the abdomen is dark gray at the end fading to pale toward the front like the under side of the legs, sternum maxillae and mandibles. The male palpi resemble closely those of *variegatus* but the process of the tibia is shorter, more sharply pointed and narrows more regularly from the base. Fig. 9b, Pl. I. The palpal organ is proportionally smaller but resembles that of *variegatus*. An immature female found at the same time resembles the male in color and form.

Lyme, Conn., from a damp field near the shore, Oct. 5, 1912.

PLATE I

- 1 *Theridion intervallatum*, markings of abdomen. 1a side of male. 1b male palpus, outer side. 1c male palpus from above.
- 2 *Theridion aurantium*. 2 and 2a two variations of marking of female. 2b, 2c, 2d variations of markings of males. 2e mandibles of male, 2f male palpus.
- 3 *Theridion sexpunctatum*, mandibles of a male from Crawford Notch. 3a mandible of male from Moosilauke. 3b mandible of male from Crawford Notch.
- 4 *Tmetiscus rectangulatus*, head and palpi of male.
- 5 *Linyphia limitanea*, dorsal markings of female. 5a epigynum, 5b, 5c male palpus.
- 6 *Epeira labyrinthea*, usual markings of female. 6a male of bog variety. 6b female of bog variety. 6c nest from the bog at Crystal, Me.
- 7 *Tetragnatha pinicola*, side of male showing markings and length of legs and palpi. 7a arrangement of eyes.
- 8 *Hahnia brunnea*, head and palpi of male from above. 8a male palpus from side.
- 9 *Sergiolus unimaculatus*, back of male. 9a under side of male. 9b tibia and tarsus of male palpus. 9c palpal organ.